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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
KIM, CHONG R	

ART UNIT	PAPER NUMBER
2624	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/642,300	HARMAN, PHILIP VICTOR	
	Examiner	Art Unit	
	CHARLES KIM	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 June 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) *1 and 3* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2 and 4-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 August 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/586,869.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment and Arguments

1. Applicant's amendment filed on June 10, 2008 has been entered and made of record.

2. Applicant's arguments with respect to the rejected claims have been considered but are moot in view of the new ground(s) of rejection, which have been necessitated by Applicant's amendment to the claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Matsumoto et al., U.S. Patent Application Publication No. 2001/0045979 (hereinafter Matsumoto) and Walker, U.S. Patent No. 6,104,837 (hereinafter Walker).

Referring to claim 4, Matsumoto discloses a method comprising:

receiving, from an external source, 2D images and depth map data of a depth map relating to the 2D images [par. 7. Note that a signal comprising 2-D motion images along with a signal containing corresponding depth information (depth map) of an object is transmitted to the stereoscopic display apparatus. Moreover, the images and depth information is supplied externally.]; and

transmitting the video signal, wherein the transmitted video signal is configured to convert the 2D images for viewing in a stereoscopic viewing system [par. 7. Note that the video signal containing the 2D images and the depth information is transmitted to the stereoscopic viewing system, where the signal is converted for stereoscopic viewing.].

Matsumoto does not explicitly disclose that the depth map data is embedded in a portion of a video signal including the 2D image data. However, this feature was exceedingly well known in the art. For example, Walker discloses embedding depth map data (DD) in a portion of a video signal including 2D image data (VID) which does not obscure or overwrite the 2D image data, and without loss of fidelity in a relative range of values in the depth map [col. 4, ll. 40-48 and fig. 3.].

Matsumoto and Walker are combinable because they are both concerned with image processing techniques that utilize both image data and depth information. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Matsumoto's 2D images and depth map data so that they are combined into one compact video signal, as taught by Walker. Matsumoto is concerned with reducing transmission bandwidth [Matsumoto, par. 7]. Walker provides an efficient MPEG2 video stream format—a well known compression format that reduced transmission bandwidth—for transmitting 2D image data along with depth information. Therefore, it would have been obvious to combine Matsumoto with Walker, in order to reduce transmission bandwidth and hence, enhance the efficiency of the image processing method.

Referring to claim 2, Walker further discloses that the depth map data is embedded in an MPEG data stream of a digital television signal [col. 4, ll. 40-48].

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Matsumoto, Walker, and Hull et al., U.S. Patent No. 5,806,005 (hereinafter Hull).

Referring to claim 5, Matsumoto explains that the source of the 2D images and depth map data is external, but does not explicitly disclose that it is a remote source. However, remote sources that provide video image data was exceedingly well known in the art. For example, Hull discloses an external remote source for providing image data [col. 1, ll. 43-53 and fig. 1].

Matsumoto, Walker, and Hull are combinable because they are all concerned with processing image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Matsumoto and Walker's external source so that it is located remotely, as taught by Hull. The reason for doing so would have been to enhance the flexibility of the image processing method by allowing multiple locations to access, process, and display the image data. Therefore, it would have been obvious to combine Matsumoto and Walker with Hull to obtain the invention as specified in claim 5.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Matsumoto, Walker, and Kawabata, U.S. Patent No. 6,370,262 (hereinafter Kawabata).

Referring to claim 6, Matsumoto discloses a method comprising:

receiving, from an external source, 2D images and depth map data of a depth map relating to the 2D images [par. 7. Note that a signal comprising 2-D motion images along with a signal containing corresponding depth information (depth map) of an object is transmitted to the stereoscopic display apparatus. Moreover, the images and depth information is supplied externally.]; and

transmitting the video signal, wherein the transmitted video signal is configured to convert the 2D images for viewing in a stereoscopic viewing system [par. 7. Note that the video signal containing the 2D images and the depth information is transmitted to the stereoscopic viewing system, where the signal is converted for stereoscopic viewing.].

Matsumoto does not explicitly disclose that the depth map data is embedded in a portion of a video signal including the 2D image data. However, this feature was exceedingly well known in the art. For example, Walker discloses embedding depth map data (DD) in a portion of a video signal including 2D image data (VID) which does not obscure or overwrite the 2D image data, and without loss of fidelity in a relative range of values in the depth map [col. 4, ll. 40-48 and fig. 3.].

Matsumoto and Walker are combinable because they are both concerned with image processing techniques that utilize both image data and depth information. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Matsumoto's 2D images and depth map data so that they are combined into one compact video signal, as taught by Walker. Matsumoto is concerned with reducing transmission bandwidth [Matsumoto, par. 7]. Walker provides an efficient MPEG2 video stream format—a well known compression format that reduced transmission bandwidth—for transmitting 2D image data along with depth information. Therefore, it would have been obvious to combine Matsumoto with Walker, in order to reduce transmission bandwidth and hence, enhance the efficiency of the image processing method.

Matsumoto and Walker do not explicitly disclose that the depth map is produced by identifying at least one object within the 2D image without using distance measurement data,

allocating an identifying tag to the at least one object, allocating a depth tag to the at least one object, determining and defining an outline for the at least one object, and encoding the identifying tag, the depth tag and the outline, of the at least one object to produce the depth map.

However, these features were exceedingly well known in the art. For example, Kawabata discloses:

identifying at least one object within a 2D image without using distance measurement data [col. 6, lines 19-42 and figure 2. Kawabata explains that the contour of the object O is determined based on contrast data.];

allocating an identifying tag to the at least one object [col. 6, lines 48-53. Note that the address, representing the x-y coordinate of the object, is interpreted as the identifying tag.];

allocating a depth tag to the at least one object [col. 6, lines 21-53 and figure 2. Kawabata discloses determining the distance of the object, which is 2m in the example given.];

determining and defining an outline (contour) of the at least one object [col. 6., lines 19-53. Kawabata discloses determining which positions in the blocks, for which the distance measurements are calculated, correspond to the pixels portions in the contour part. This correspondence is construed as determining and defining an outline of the object.]; and

encoding the identifying tag, the depth tag and the outline, of the at least one object to produce a depth map [col. 6, lines 19-53. Note that the depth map in figure 2C is generated by encoding the identifying tag (address), depth tag (distance data), and outline (contour) of the object.].

Matsumoto, Walker, and Kawabata are combinable because they are all concerned with image processing methods that utilize both image data and depth data. At the time of the

invention, it would have been obvious to a person of ordinary skill in the art to modify Matsumoto and Walker's depth data in view of Kawabata's teachings. The reason for doing so would have been to enhance the efficiency of the image processing method by allowing only the necessary information to be extracted using simple calculation techniques [Kawabata, col. 2, ll. 30-34]. Therefore, it would have been obvious to combine Matsumoto and Walker with Kawabata to obtain the invention as specified in claim 6.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Kim whose telephone number is 571-272-7421. The

examiner can normally be reached on Mon thru Thurs 8:30am to 6pm and alternating Fri 9:30am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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August 14, 2008